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EXAMINER

KINNEY, ANNA L

ART UNIT PAPER NUMBER

1731

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/121,152

Applicant(s)

OW ET AL.

Examiner

Anna Kinney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 21-28, 30-38 and 40-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-28, 30-38 and 40-50 is/are rejected.
- 7) ☒ Claim(s) 28, 36 and 38 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 07/518,935.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Priority***

The Examiner acknowledges a priority date of May 16, 1989 for claims 21-25, 27-28, 30-31, 33-34, 36-38, 40-47, and new claims 49-50. The Examiner also acknowledges a priority date of May 6, 1994 for claims 26, 32, and 35. The Examiner has not found support in the various specifications for new claim 48.

### ***Response to Arguments***

Applicant's arguments filed August 2, 2005 have been fully considered but they are not persuasive.

In response to applicant's arguments regarding the pH of the '299 patent (Remarks, pages 9-12), the Examiner disagrees. As the applicant points on page 10, lines 1-2 of the Remarks, no limitations were provided in the '299 patent regarding the acceptable pH range of the pulping step. The Examiner notes that an alkaline pH is any pH greater than 7.0. Therefore, the claims currently allow for alkaline pulping (e.g., wherein the pH is between 7.0 and 8.0). Even so, since no starting pH is provided in the examples of the '299 patent, addition of NaOH could presumably be used simply to correct an excessively acid starting pH.

In response to the applicant's arguments regarding the JPO Decision (Remarks, p. 11), this document provides arguments against the reference individually. The current rejection combines the '299 patent with other references. One cannot show nonobviousness by attacking references individually where the rejections are based on

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combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to the applicant's arguments (Remarks, p. 12-15) regarding JP '494 (Nomura), applicant's arguments have been considered but are moot in view of the revised ground(s) of rejection.

Applicant's arguments with respect to claims 21-25, 27-34, and 36-47 (Remarks, p. 15) with regard to WO 91/14819 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments with respect to claims 21-47 (Remarks, pages 15-17) with regard to Cayle or Wood have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments with respect to claims 26 and 35 (Remarks, pages 17-18) with regard to the '595 application or the '819 application have been considered but are moot in view of the new ground(s) of rejection.

### ***Response to Amendment***

The declaration of Howard Kaplan under 37 CFR 1.132 filed August 2, 2005 is insufficient to overcome the rejection of claims 21-28, 30-38, and 40-50 based upon the 35 USC 103 rejections applying JP '299 as set forth in the last Office action because: the declaration fails to set forth facts, and is not commensurate in scope with claims 26, 28, 31-38, 40, 42-44, and 46.

The Examiner notes that the presence or absence of enzyme in the '299 patent (AKA the JPA) is not differentiated by Example 1 vs. Example 2. Examples 1, 2, and 3

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all refer to separate tables in which several runs were performed, some with enzyme in the de-inking agent, and some without. Therefore, to obtain results that represented a de-inking agent comprising an enzyme without a surfactant, Mr. Kaplan would have to select Example 1, run 10 or Example 2, run 26. The main difference that the Examiner notes between Example 1 and Example 2 is that Example 1 discloses addition of the deinking agent during disintegration, whereas Example 2 discloses addition of the deinking agent after disintegration. The Examiner considers 1.0% sodium hydroxide in a 5% pulp concentration to indicate a sodium hydroxide concentration of 0.0005 g/L in water, or a molar concentration of  $1.25 \times 10^{-6}$ . The Examiner's preliminary calculations suggest that if the wastepaper/water slurry was otherwise neutral, the resulting pH would be 8, not 10.6. It is not apparent from the declaration whether this was a measured value. Furthermore, the results of Mr. Kaplan's laboratory tests only showed a .7% difference in whiteness in the resulting paper, which the Examiner does not expect would provide statistical significance. The conditions of Mr. Kaplan's tests do not represent the limitations of claims 26, 28, 31-38, 40, 42-44, and 46. The filtrate L-value does not demonstrate an improvement, and the cost savings is likely to be minor compared to the overall expenses of a secondary fiber mill. No data was provided to lend perspective to the cost disclosed, nor did Mr. Kaplan identify what year this approximate figure represents.

In view of the foregoing, when all of the evidence is considered, the totality of the rebuttal evidence of nonobviousness fails to outweigh the evidence of obviousness.

The declarations of Karl-Erik Eriksson and of Douglas Eveleigh under 37 CFR 1.132 filed August 2, 2005 are insufficient to overcome the rejection of claims 21-28, 30-38, and 40-50 based upon the 35 USC 103 rejections applying JP '299 as set forth in the last Office action because: the declarations fail to establish a lack of reasonable expectation of success.

Drs. Eriksson and Eveleigh cite a key paragraph from the '299 patent. In point #4 of each declaration, the paragraph quoted clearly indicates that an alkaline cellulase is a preferred embodiment. As discussed in the rejections, below, the '299 patent does not disclose the pH of the various process steps, with the exception of the step of obtaining the enzyme. The '299 patent further discloses that acid or alkali reagents can be added, and that the invention is not limited by the examples. As for an expectation for success, only a reasonable expectation of success is required for obviousness, not absolute predictability (See MPEP 2143.02). The '299 patent disclosed nothing contradicting a reasonable expectation that operating the process at a pH between 3 and 8 would result in success. In contradiction to Drs. Eriksson's and Eveleigh's arguments that alkaline conditions were thought to be necessary for deinking prior to the instant application, Nobuyuki (JP 02-080683), filed August 18, 1988 and provided by the applicant, describes deinking using enzymes at a pH range of 3-7.

The declaration of Harald Schmid under 37 CFR 1.132 filed August 2, 2005 is insufficient to overcome the rejection of claims 21-28, 30-38, and 40-50 based upon 35 USC 103 as set forth in the last Office action because: It include(s) statements which amount to an affirmation that the affiant has never seen the claimed subject matter

before. This is not relevant to the issue of nonobviousness of the claimed subject matter and provides no objective evidence thereof. See MPEP § 716.

The Nobuyuki application predates the pilot trial of the Zwingen mill.

The declaration of Masahiro Samejima under 37 CFR 1.132 filed August 2, 2005 is insufficient to overcome the rejection of claims 21-28, 30-38, and 40-47 based upon the 35 USC 103 rejection applying JP 63-59494 as set forth in the last Office action because: the facts presented are not germane to the rejection at issue.

The declaration is moot in view of new ground(s) of rejection.

#### ***Information Disclosure Statement***

The information disclosure statement filed October 19, 1998 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered. JP 52-20563 was provided in Japanese with no abstract or explanation of relevance.

#### ***Oath/Declaration***

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not identify the city and either state or foreign country of residence of each inventor. The residence information may be provided on either an application data sheet or supplemental oath or declaration.

### ***Claim Objections***

Claims 28, 36, and 38 are objected to because of the following informalities: the phrase "consistency of" occurs twice in the second line of the claim and is redundant. The Examiner suggests that the applicant delete the first instance of the phrase. Also in claim 38, the word "concentration" at the end of the claim is unnecessary, since it provides the same limitation as "consistency" in this claim. Appropriate correction is required. In the first line of claim 36, the word "in" should be "ink".

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 27, 28, 37, and 48 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claims 27 and 37, the limitation "alkali is not added to the aqueous medium" is not disclosed in the specification. Although the specification indicates that no alkali is



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required, nothing in the specification specifically excludes the addition of alkaline reagents, particularly as a group.

In claim 28, the limitation "12% or greater" exceeds the range disclosed in the specification. The highest consistency disclosed is 15%.

In claim 48, the limitation "the enzyme is not an alkali-resistant cellulase" is not disclosed in the specification.

In claim 49, the term "common wastepaper pulping consistency" is not disclosed in the specification.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 25, 30, and 49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 25 and 30 depend from claim 1 as written. Since claim 1 has been cancelled, the Examiner has considered these claims as dependent from claim 21 for purposes of examination.

The term "common" in claim 49 is a relative term which renders the claim indefinite. The term "common" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Therefore, the wastepaper pulping consistency recited in this claim is indefinite.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21-27, 30, 41, 45, and 47-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Application 59-9299 (JP '299) in view of Fuentes et al (U.S. Patent 4,923,565).

With respect to claims 21 and 41, JP '299 discloses a method of de-inking waste printed paper, comprising a) pulping waste printed paper with an enzyme capable of dislodging ink particles from the waste printed paper (p. 4, ¶ 1-2) in an aqueous medium, wherein ink is dislodged from the waste printed paper by action of the enzyme (p. 3, ¶ 4); and b) removing the dislodged ink particles from the resulting pulp containing medium (p. 1, Detailed Description ¶ 1). JP '299 does not disclose expressly that the pulping occurs at a pH between 3 and 8. However, JP '299 does disclose that the enzyme used in the invention can be commonly occurring cellulase or alkaline cellulase (p. 2, ¶ 6), that acid and alkali can be added (e.g., for adjusting pH; p. 4, ¶ 3), and that the examples provided do not restrict the invention (p. 4, ¶ 4).

Fuentes et al discloses pulping recycled fibers with cellulase added at a pH between 3 and 7 (col. 3, lines 36-43), and in an example, 4.8 (col. 4, lines 38-39), which contains three specific points (3, 4.8, and 7) within the claimed range of between 3 and 8.

With respect to claims 22, 23, 25, 30, 49, and 50, JP '299 discloses that: dislodged ink particles are removed by flotation or washing (p. 1, Detailed Description ¶ 1); that the enzyme is a cellulase; that the temperature during pulping is 45°C, which contains one specific point within the claimed range of from room temperature up to about 60°C; and that pulping consistency is 6% (e.g. common; p. 4, ¶ 7)..

The Examiner has considered room temperature to mean 20 to 25°C, as defined by the applicants during prosecution of the parent case (07/518,935; The Condensed Chemical Dictionary, p. 899).

With respect to claim 24, JP '299 discloses that the amount of enzyme used is above 0.002 weight-% cellulase relative to the raw material of old paper (p. 4, ¶ 1). Fuentes et al further discloses that the amount of enzyme used is 0.01 – 2% of the weight of the dry pulp (col. 3, lines 15-24), which includes two specific points within the claimed range of 0.005 to 5 percent-by-weight, based on the dry weight of the wastepaper.

With respect to claim 27, Fuentes et al discloses that alkali is not added to the aqueous medium (col. 4, line 30 to col. 5, line 10; col. 6 lines 38-64).

With respect to claim 48, JP '299 does not exclude the use of non-alkali resistant cellulases (p. 2, last ¶). Furthermore, Fuentes et al discloses that the enzyme is not an alkali-resistant cellulase (col. 3, lines 36-43).

With respect to claims 45 and 47, at the time of the invention, it would have been obvious to a person of ordinary skill in the art that if a process was operated using the

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same materials, reagents, and conditions as those claimed, the method of degradation would be the same as in the claimed invention.

With respect to claim 26, JP '299 does not disclose expressly that the enzyme is derived from the microorganisms claimed.

Fuentes et al discloses that cellulase is derived from *Tirchoderma viridae* (col. 4, lines 47-52) or *Aspergillus niger* (col. 6, lines 40-43).

At the time of the invention, it would have been obvious to use the enzymes and conditions described by Fuentes et al in the de-inking method of JP '299 to obtain the invention as specified in claims 21-27, 30, 41, 45, and 47-50.

The motivation would have been to prevent denaturing the enzymes (col. 3, lines 36-43), and that among all the enzyme preparations containing cellulases and/or hemicellulases, those which possess a C<sub>1</sub> activity, a C<sub>x</sub> activity and a xylanase activity are preferably selected (col. 2, lines 57-60).

Claims 28, 31-38, 40, 42-44, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '299 and Fuentes et al as applied to claim 21 above, and further in view of Hageman et al (U.S. Patent 4,548,674).

With respect to claim 28, JP '299 and Fuentes et al do not disclose expressly that the pulping consistency is about 12% or greater.

Hageman et al discloses pulping consistencies of 1-50%, 1-35%, and 1-15% (col. 3, lines 25-30), which contains three specific points (15, 35, 50) within the claimed range of about 12% or greater.

With respect to claim 32, JP '299 and Fuentes et al is applied as in the rejection to claim 24, above; Fuentes et al is applied as in the rejection to claim 26, above; and JP '299 is applied as in the rejection to claim 30, above.

With respect to claim 35, Fuentes et al is applied as in the rejection to claim 26, above.

With respect to claim 31, JP '299 discloses a method of recycling waste printed paper (p. 1, Detailed Description, ¶ 1). JP '299 and Fuentes et al are applied to the remaining limitations of the claim as discussed in the rejection of claim 21, above, with the exception of pulping consistency. Hageman et al is applied with respect to the pulping consistency as discussed in the rejection of claim 28, above.

With respect to claims 33, 37, and 46, JP '299 and Fuentes et al is applied as in the rejection to claims 24, 27, and 45, above.

With respect to claims 34, 36, and 40, JP '299 is applied as in the rejections to claims 22, 23, 25, and 30, above.

With respect to claim 38, Hageman et al is applied as in the rejection to claim 28, above.

With respect to claims 42-44, at the time of the invention, it would have been obvious to a person of ordinary skill in the art that if a process was operated using the same enzyme and conditions as those claimed, the results would be the same as in the claimed invention.

At the time of the invention, it would have been obvious to use the pulping consistency as described by Hageman et al for the pulping and de-inking process of JP

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'299 and Fuentes et al to obtain the invention as specified in claims 28, 31, 33-34, 36-38, 40, 42-44, and 46.

The motivation would have been that good results have been obtained in pulpers, and in a pulper, pulp consistencies of between 1 and 15% are generally used (col. 3, lines 25-30).

### ***Double Patenting***

Applicant is advised that should claim 21 be found allowable, claim 41 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Conclusion***

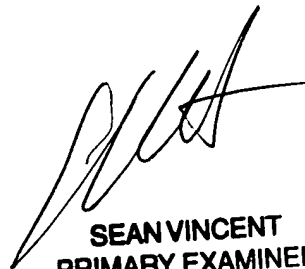
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anna Kinney whose telephone number is (571) 272-8388. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ALK



**SEAN VINCENT**  
**PRIMARY EXAMINER**